National Institute of Environmental Health Sciences

Synchrony in hunting bags: Reaction on climatic and human induced changes?

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Abstract:

Human induced land use changes negatively impact the viability of many wildlife species through habitat modifications and mortality, while some species seem to benefit from it. Roe deer (Capreolus capreolus), a wide spread ungulate increased both its abundance and range throughout Europe. This pattern is also reflected in the increasing hunting bags over the last 40 years. Such a development raises questions about the relationship between human hunting and population dynamics and, in particular, about the potential of human hunting to control related populations. We analysed and reconstructed annual hunting bags of roe deer for three federal states of northern Germany, Brandenburg, Lower Saxony and Mecklenburg West Pomerania for the years 1972 to 2011. Since 1992 the hunting bags from these three states are significantly higher than those reported for the years 1972-1991. Our reconstruction takes into consideration effects of climate variability, expressed by inter-annual changes in the North Atlantic Oscillation and impacts from rapeseed and wheat cultivation. We found that severe winters, which are indicated by negative values of the North Atlantic Oscillation during the months December-March, directly, or with a time lag of two years affect the number of deer shot. In contrast, an increase in the area used for rapeseed cultivation coincides with higher numbers of roe deer shot, with respect to the overall mean value. Consequently, we recommend that wildlife management addresses changes in large scale processes including land use pattern and climate variability.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Temperature, Other Exposure

Temperature: Fluctuations

Other Exposure: North Atlantic Oscillation

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified, Rural

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Germany

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified